



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,471	09/20/2006	Yoshiaki Kumamoto	285480US0PCT	5691
22850	7590	03/31/2011		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
NAMAY, DANIEL ELLIOT				
ART UNIT		PAPER NUMBER		
3749				
NOTIFICATION DATE		DELIVERY MODE		
03/31/2011		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com

oblonpat@oblon.com

jgardner@oblon.com

### Office Action Summary

**Application No.**

10/566,471

**Applicant(s)**

KUMAMOTO ET AL.

**Examiner**

Daniel E. Namay

**Art Unit**

3749

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 September 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 7, 10 and 12-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8, 9 and 11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 September 2010 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 1/13/11
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response To Amendment***

1. The Amendments submitted on 13 September 2010 have been received, & its contents have been carefully considered. The Examiner wishes to thank the Applicants for the response to the Examiner's action and for amending the claims in the appropriate manner. Per Applicants' amendment:

- A. Claims 1, 8, 9 & 11 were amended;
- B. Claims 7 & 10 were cancelled; &
- C. Fig. 3 of the Drawings was amended

2. In response to the above amendment:

- A. The Objection to the Drawings is withdrawn;
- B. The Rejection under 35 U.S.C. § 112, second paragraph, is withdrawn; &
- C. Claims 1-6, 8, 9 & 11 are pending for review.

***Specification***

3. The disclosure is objected to because of the following informalities:

- A. Applicants appear to be using the term "flexural strength" as a measure of flexibility, whereas "flexural strength" is the measurement of "the stress required to break a specimen by exerting a torque on it" (see attached excerpt from the CRC Handbook, on-line edition). The flexibility and the breaking point of a component are not necessarily synonymous.
- B. Further, Applicants utilize the units of measurement for flexural strength as newtons per centimeter (n/cm), which is a measurement of surface tension;

however, flexural strength is a measurement of pressure, or newtons per square centimeter ( $\text{n/cm}^2$ ) (see attached excerpt from the CRC Handbook, on-line edition).

Appropriate correction is required.

***Claim Objections***

4. Claims 1, 8 & 11 are objected to because of the following informalities:
- A. The referenced claims utilize the units of measurement for flexural strength as newtons per centimeter ( $\text{n/cm}$ ), which is a measurement of surface tension; however, flexural strength is a measurement of pressure, or newtons per square centimeter ( $\text{n/cm}^2$ ) (see attached excerpt from the CRC Handbook, on-line edition). It is unclear whether the intent is to recite a surface tension limitation or a limitation of flexural strength. **NOTE:** The action below is predicated on the assumption that Applicants' intent is to recite the flexural strength in  $\text{n/cm}^2$ .
- B. In Claim 8, it is unclear which component (the warming device, molded article, heat generating sheet or heat insulating sheet) has a flexural strength after heat generation of  $.05\text{-}3\text{n/cm}^2$ .

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1, 2, 5, 6 & 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-2572621 [**JP-621**] in view of Minami, US #2002/0020406 [**Minami ('406)**].

8. In Re Claim 1, **JP-621 (See attached TRANSLATION)** discloses all aspects of the claimed invention, including: A warming device of sheet form comprising (**P. 1, Under "Industrial Application"**) a heat generating molded article prepared by papermaking (**P. 3, Ln. 10-15**) and containing an oxidizable metal (**Iron Powder**), a moisture retaining agent (**Activated Carbon**), and a fibrous material; and an air permeable holder holding the heat generating sheet (**#2**), the warming device having a thickness of 0.1 to 10 mm (**P. 3, Ln. 13-14: 2-8mm, or 0.2-10mm**).

A. However, **JP-621** fails to disclose: a flexural strength after heat generation comes to an end of 0.05 to 3.0 N/[cm<sup>2</sup>].

- i. Nevertheless, **Minami ('406)** discloses a flexible heat generating medium (**Abstract**) that retains its flexibility before, during & after heat generation (**Para. 19**).
  - ii. It would have been obvious to one of ordinary skill in the art at the time of the invention to maintain the flexibility, as taught by **Minami ('406)**, of the article of **JP-621** to prevent breakage & allow for the restoration of the original shape throughout the process (**Para. 19**).
- B. With respect to the specific range of flexural strength, it would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the flexural strength to maintain or maximize comfort levels, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Please note: The instant application has not disclosed any new or unexpected results (criticality) in the flexibility of the article for the range of flexural strength.
- C. With respect to the article being "prepared by papermaking": In accordance to MPEP 2113, the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight. Please note that even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product

itself. The patentability of a product, i.e. the flexural (mechanical) strength of the warming device, does not depend on its method of production, i.e. papermaking. *In re Thorpe*, 227 USPQ 964, 966 (**Federal Circuit 1985**). **NOTE:** According to the disclosure, the mechanical properties of the warming device are dependent upon the water content obtained by the dewatering process after completion of the papermaking process (**See Para. 89 on P. 25**).

9. In Re Claim 11, **JP-621** (**See previously attached TRANSLATION**) discloses all aspects of the claimed invention, including: A warming device of sheet form comprising (**P. 1, Under "Industrial Application"**) a heat generating molded article prepared by papermaking (**P. 3, Ln. 10-15**) and containing an oxidizable metal (**Iron Powder**), a moisture retaining agent (**Activated Carbon**), and a fibrous material; and an air permeable holder holding the molded sheet (**#2**), the holder being partly formed of an air permeable sheet (**P. 3, Ln. 18-29: Holder formed of both air permeable and impermeable sheets**), there being no insulating sheet between the air permeable sheet & molded sheet (**Fig. 1, 2: No insulating layer is shown**);

A. However, **JP-621** fails to disclose: a flexural strength after heat generation comes to an end of 0.05 to 3.0 N/[cm<sup>2</sup>].

i. Nevertheless, **Minami ('406)** discloses a flexible heat generating medium (**Abstract**) that retains its flexibility before, during & after heat generation (**Para. 19**).

- ii. It would have been obvious to one of ordinary skill in the art at the time of the invention to maintain the flexibility, as taught by **Minami ('406)**, of the article of **JP-621** to prevent breakage & allow for the restoration of the original shape throughout the process (**Para. 19**).
- B. With respect to the specific range of flexural strength, it would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the flexural strength to maintain or maximize comfort levels, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Please note: The instant application has not disclosed any new or unexpected results (criticality) in the flexibility of the article for the range of flexural strength.
- C. With respect to the article being "prepared by papermaking": In accordance to MPEP 2113, the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight. Please note that even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product, i.e. the flexural (mechanical) strength of the warming device, does not depend on its method of production, i.e. papermaking. *In re Thorpe*, 227 USPQ 964, 966



**(Federal Circuit 1985).** NOTE: According to the disclosure, the mechanical properties of the warming device are dependent upon the water content obtained by the dewatering process after completion of the papermaking process (**See Para. 89 on P. 25**).

- D. With respect to the thickness of the warming device in the range of 1-30mm, it would have been an obvious matter of design choice since applicant has not disclosed that a thickness greater than 10mm solves any stated problem or is for any particular purpose (**Para. 34**) and it appears that the invention would perform equally well with a thickness in the range up to 10mm..

10. In Re Claim 2, the thickness, in the range of 0.1-2.0mm, has been discussed in Claim 1 above.

11. In Re Claim 5, **JP-621** discloses: the holder comprises an air permeable sheet and an air impermeable sheet joined together (**P. 3, Ln. 18-29**), and has a surfacing member disposed on the outer surface of each of the air permeable sheet and the air impermeable sheet (**Adhesive Layer #4**).

12. In Re Claim 6, **JP-621** discloses: the surfacing member on the air impermeable sheet retains a functional preparation (**The adhesion of Adhesive Layer #4 is a functional preparation**).

13. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over **JP-621** in view of **Minami ('406)**, as applied to Claim 1 above, and further in view of Allison et al., US #3,448,005 [**Allison ('005)**].

14. In Re Claim 3, **JP-621** discloses all aspects of the claimed invention except: the fibrous material has a CSF of 600 ml or less.

A. Nevertheless, **Allison ('005)** discloses producing a sheet product to a CSF of 430-450 ml (**Col. 5, Ln. 62-64**).

B. It would have been obvious to one of ordinary skill in the art at the time of the invention to produce the device of **JP-621** with the CSF of **Allison ('005)** to impart an appropriate strength and drainage characteristics.

15. Claim 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over **JP-621** in view of **Minami ('406)**, as applied to Claim 1 above, & further in view of JP-2003-102761 [**JP-761**].

16. In Re Claim 4, **JP-621** discloses all aspects of the claimed invention except: the molded sheet contains 50% by weight or more of the components other than the fibrous material.

A. Nevertheless, **JP-761** discloses material component other than fibrous material being 50% or greater (**Para. 10-15**)

B. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the non-fibrous components of **JP-621** at the percentage

taught by **JP-761** to provide the desired / required amount of heat generation  
(**Para. 11**).

17. Claims 8 & 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over **JP-621** in view of **Minami ('406)**, and further in view of **JP-1-158762 [JP-762]**.

18. In Re Claim 8, **JP-621 (See attached TRANSLATION)** discloses all aspects of the claimed invention, including: A warming device of sheet form comprising (**P. 1, Under "Industrial Application"**) a heat generating molded article prepared by papermaking (**P. 3, Ln. 10-15**) and containing an oxidizable metal (**Iron Powder**), a moisture retaining agent (**Activated Carbon**), and a fibrous material; and an air permeable holder holding the heat generating sheet (**#2**);

A. However, **JP-621** fails to disclose: a flexural strength after heat generation comes to an end of 0.05 to 3.0 N/[cm<sup>2</sup>].

i. Nevertheless, **Minami ('406)** discloses a flexible heat generating medium (**Abstract**) that retains its flexibility before, during & after heat generation (**Para. 19**).

ii. It would have been obvious to one of ordinary skill in the art at the time of the invention to maintain the flexibility, as taught by **Minami ('406)**, of the article of **JP-621** to prevent breakage & allow for the restoration of the original shape throughout the process (**Para. 19**).

B. Further, **JP-621** fails to disclose: the warming device further comprising a non-liquid retentive, heat insulating sheet disposed in the holder.

- i. Nevertheless, **JP-762** discloses an insulating layer (**#1**).
  - ii. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the insulating layer of **JP-762** into the article of **JP-621** to disperse the heat in the desired direction.
- C. With respect to the specific range of flexural strength, it would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the flexural strength to maintain or maximize comfort levels, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Please note: The instant application has not disclosed any new or unexpected results (criticality) in the flexibility of the article for the range of flexural strength.
- D. With respect to the article being "prepared by papermaking": In accordance to MPEP 2113, the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight. Please note that even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product, i.e. the flexural (mechanical) strength of the warming device, does not depend on its method of production, i.e. papermaking. *In re Thorpe*, 227 USPQ 964, 966

**(Federal Circuit 1985).** NOTE: According to the disclosure, the mechanical properties of the warming device are dependent upon the water content obtained by the dewatering process after completion of the papermaking process (**See Para. 89 on P. 25**).

19. In Re Claim 9, **JP-621** discloses: the holder being partly formed of an air permeable sheet (**P. 3, Ln. 18-29: Holder formed of both air permeable and impermeable sheets**), & **JP-762** further discloses the heat insulating sheet (**#1**) not disposed between the air permeable sheet (**#3**) and the molded sheet (**#2**).

#### ***Response to Arguments***

20. Applicants' arguments filed 13 September 2010 have been fully considered but they are not persuasive.

- A. With respect to Claims 1, 8 & 11, beginning on P. 9, and Claim 3 beginning on P. 13, have been considered but are moot in view of the new ground(s) of rejection.
- B. With respect to Claim 2, on P. 13, Applicants argue that the prior art does not disclose the specified thickness. Examiner respectfully disagrees. The thickness taught by **JP-621** of between 0.2-10mm falls within the specified range of 0.1-2mm.

#### ***Conclusion***

21. The prior art made of record and not relied upon and is considered pertinent to applicant's disclosure is listed in the attached form PTO-892.

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel E. Namay whose telephone number is (571) 270-5725. The examiner can normally be reached on Mon - Fri (Alt Fri) 7:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven B. McAllister can be reached on (571) 272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel E. Namay/  
Examiner, Art Unit 3749

/Steven B. McAllister/  
Supervisory Patent Examiner, Art Unit 3749